What is claimed is:

1. A stereoscopic system for viewing stereogram images without viewing glasses, comprising an apparatus with a visualization stereoscreen for forming separately localized screen images of stereopairs, a number of stereopairs being equal to a number of spectators, the stereoscopic system further comprising, on the stereoscreen, a system for optically separating the left or right screen image of each predetermined stereopair, respectively, to a single stereo aspect for viewing by the left and right eye of one given spectator, respectively, said system *characterized in that* the apparatus for forming stereoscopic images is a stereo-projection system with a lenticular raster stereoscreen, or a cat's-eye screen, or a concave spherical stereoscreen, a number of stereo-projectors being equal to a number of spectators, projection lenses of each of the stereo-projectors are adapted to be displaced in parallel with the stereoscreen, and located and oriented in space so that the screen image of one stereopair projected by lenses of each stereo-projector is focused by the stereoscreen to a stereo aspect for viewing by one predetermined spectator, the stereo-projection system comprising an automatic corrector with actuators which are connected to the pairs of the projection lenses of the stereo-projectors for separately shifting the lenses in the direction of registration of one predetermined stereo aspect with appropriate eyes of a predetermined spectator, for which purpose the system comprises a sensor for separately determining the location coordinates of the eyes of every spectator relative to the stereo aspect for viewing the stereopair screen image, the sensor being connected to the automatic corrector and adapted to generate control signals which are provided to the automatic corrector.

2. The stereoscopic system as set forth in claim 1, wherein the stereoscreen is a translucent screen with three parallel layers of lenticular rasters formed by spherical positive microlenses, all

microlenses in the rasters being arranged so that every three lenses, one from each raster layer, are located on a common optical axis perpendicular to the planes of the rasters at a distance between the lenses in accordance with the structure of a straight-drawing lens with the linear optical magnification ratio equal to unity, all pairs of the projection lenses being mounted for through-projection behind the stereoscreen in the plane which is parallel to the plane of the stereoscreen and spaced from the stereoscreen at a distance which provides sharp focusing by the stereoscreen of every stereopair screen image to points of stereo aspects for clearly viewing the stereoscopic effect by every spectator.

3. The stereoscopic system as set forth in claim 1, wherein the stereoscreen comprises a mirror lenticular raster of cat's-eye type formed by cat's-eyes in the form of spherical microlenses having a mirror coating at the rear side, or the stereoscreen comprises a raster made by corner mirror reflectors, every pair of the projection lenses for magnifying projections on the stereoscreen being located closer to the head of a spectator, the lenses being directed at the stereoscreen for reflecting, by the stereoscreen, the right stereopair image projected by the lens at the right side of the head to the right eye of this spectator, and the left stereopair image projected by the lens at the left side of the head to the left eye of the spectator.

4. The stereoscopic system as set forth in claim 1, wherein the stereoscreen for reflecting the projection comprises a spherical concave mirror with the center of radius of curvature located at the side of a spectator, each given projection lens being continuously registered symmetrically to the appropriate eye of the spectator relative to the radius of curvature of the screen mirror which are in this plane of symmetry.

5. The stereoscopic system as set forth in any one of claims 1 to 4, wherein the stereo-projection system comprises a stereo-projector for forming images of a single common stereopair, comprising a pair of projection telelenses with a light-splitting system including mirror or prism elements for splitting projection beams projected from output pupils of the telelenses and directing the beams to input pupils of wide-angle or normal projection lenses for magnifying the stereopair images on the stereoscreen, the projection lenses for magnifying the images with the light-splitting elements being connected to an actuator of the automatic corrector for separately shifting the lenses in parallel with the plane of the stereoscreen to register predetermined stereo aspects with the eyes of a respective spectator.

6. A stereoscopic system for viewing stereogram images without viewing glasses, comprising an apparatus with a visualization stereoscreen for forming separately localized screen images of stereopairs, a number of the stereopairs being equal to a number of spectators, the system further comprising, on the stereoscreen, a system for optically separating of the left or right screen image of each predetermined stereopair, respectively, to a single stereo aspect for viewing by the left or right eye of one given spectator, respectively, *characterized in that* the apparatus for generating stereoscopic images comprises a monitor with a lenticular raster stereoscreen for forming auto-stereogram images, the stereoscreen of the monitor being formed as a directed transmission of a transparency on the screen, for forming stereopairs images displaceable in the screen plane and focused by the lenticular raster to predetermined separate stereo aspects for viewing each stereopair by a predetermined spectator at free displacement of the spectators, for which purpose the monitor comprises an automatic corrector for separately displacing, on the stereoscreen, the elements of the image in parallel with the lenticular raster so that each stereo aspect is optically registered, by

the lenticular raster, with the eyes of a predetermined spectator, for which purpose the system comprises a sensor for separately determining the spatial location coordinates of the eyes of each spectator, the sensor being connected to the automatic corrector and adapted to generate control signals which are provided to the automatic corrector.

7. A stereoscopic system for viewing stereogram images without viewing glasses, comprising an apparatus with a visualization stereoscreen for forming separately localized screen images of stereopairs, a number of the stereopairs being equal to a number of spectators, the system further comprising, on the stereoscreen, a system for optically separating the left and right screen image of each predetermined stereopair, respectively, to a single stereo aspect for viewing by the left or right eye of a predetermined spectator, respectively, *characterized in that* the screens comprise separate lenticular rasters, the apparatus for forming stereoscopic images is monitor with a directed light emission of the screen or transmission of a transparency, or a stereo-projection system for forming, on the stereoscreen, fixed images of the stereopairs with a directed light emission of the each stereopair image to lenses of a predetermined separate lenticular raster of the stereoscreen, focusing by the lenses the screen images of any predetermined stereopair to a predetermined aspect for viewing the stereopair by a predetermined spectator at free displacement of the spectators, for which purpose the monitor or the projection system includes an automatic corrector for separately displacing distinct lenticular rasters in accordance with the location of the eyes of every spectator, the automatic corrector comprising actuators connected to each separate lenticular raster for separately displacing the raster along the screen relative to the screen stereopair images projected by this raster so that each appropriate stereo aspect is optically registered with the eyes of the appropriate spectator, for

which purpose the system includes a sensor for separately determining the spatial location coordinates of each eye of every spectator, the sensor being connected to the automatic corrector and adapted to generate control signals which are provided to the automatic corrector.

8. A stereoscopic system for viewing stereogram images without viewing glasses, comprising an apparatus with a visualization stereoscreen for forming separately localized screen images of stereopairs, a number of the stereopairs being equal to a number of spectators, the system further comprising, on the stereoscreen, a system for optically separating the left and right screen image of each predetermined stereopair, respectively, to a single stereo aspect for viewing by the left and right eye of one predetermined spectator, respectively, *characterized in that* the apparatus for forming fixed stereo aspects of the stereopair screen images comprises a monitor with a directed light emission of the screen or transmission of a transparency with the lenticular raster for the number of formed stereopair images equal to the number of spectators, or the apparatus comprises a stereo-projection system with a lenticular raster stereoscreen and a number of stereo-projectors equal to the number of spectators, the projection lenses of each stereo-projector being located in space so that the screen image of one stereopair projected by lenses of each stereo-projector is focused by the stereoscreen to a stereo aspect for viewing by one predetermined spectator, in any embodiment of the apparatus for forming stereoscopic images chairs for spectators are mounted in a sector for viewing stereoscopic images, each of the chairs being movable within the area of spectator's displacement and registration of the spectator's eyes with one predetermined stereo aspect, the system further comprising an automatic corrector with actuators connected to each of the chairs for separately displacing the chair with the spectator to a position of

optimal viewing of the stereoscopic effect by the spectator, for which purpose the system further comprises a sensor for separately determining the spatial location coordinates of each eye of every spectator, the sensor being connected to the automatic corrector and adapted to generate control signals which are provided to the automatic corrector.

9. The stereoscopic system as set forth in any one of claims 1 to 5, 7, 8, wherein the projection lenses for magnifying images on the stereoscreen are provided with individual optical correction elements such as curved mirrors or lenses for correcting geometrical errors, and/or half-tone, and/or color light filters for adjusting the brightness or chroma over the field of image.

10. The stereoscopic system as set forth in any one of claims 1 to 9, wherein the stereoscopic system is adapted for separate stereo-projection of parts of a common left and right image of each stereopair by separate stereo-projectors on different parts of the stereoscreen, and/or stereo-projection on the central part of the stereoscreen, and mono-projection of the left part of the left image on the left part of the screen, and the right part of the right image of the stereopair on the right part of the screen.